

IN THE CLAIMS:

Please amend claims 1-34 as follows.

1. (Currently Amended) A method for limiting a signal in a transmitter at chip level, ~~characterized by~~ the method comprising:

(302) determining a limiting signal from a transmissible signal filtered using a pulse shaping filter,

(304) determining an error signal using the transmissible signal and the limiting signal,

(306) generating a limited transmissible signal by reducing an error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal.

2. (Currently Amended) A method for limiting a signal in a transmitter at chip level, ~~characterized by~~ the method comprising:

(402) determining a limiting signal from a transmissible signal filtered using a pulse shaping filter,

(404) determining an error signal using the transmissible signal and the limiting signal,

(406) orthogonalizing the error signal filtered using the filter matched to a chip pulse waveform,

(408) generating a limited transmissible signal by reducing the orthogonalized error signal from the transmissible signal.

3. (Currently Amended) A method for limiting a signal in a transmitter at chip level, ~~characterized by~~ the method comprising:

(502)-combining at least two signals modulated on different carriers to a combination signal,

(504)-determining a limiting signal from the combination signal filtered using a pulse shaping filter,

(506)-determining an error signal using the combination signal and the limiting signal,

(508)-dividing the error signal onto different carriers in a predetermined manner,

(510)-generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal.

4. (Currently Amended) A method as claimed in claim 1, ~~2 or 3~~,
~~characterized in that~~ wherein the transmissible signal is a baseband signal.

5. (Currently Amended) A method as claimed in claim 1 ~~or 2~~,
~~characterized in that~~ wherein the limiting signal is a baseband signal.

6. (Currently Amended) A method as claimed in claim 1 ~~or 2~~,
~~characterized in that~~ wherein the error signal is a baseband signal.

7. (Currently Amended) A method as claimed in claim 1, ~~2 or 3~~,
~~characterized in that~~ wherein the limiting signal is determined by means of a threshold value set for the power or amplitude values.

8. (Currently Amended) A method as claimed in claim 1, ~~2 or 3~~,
~~characterized in that~~ wherein the limiting signal is determined by means of a

threshold value set for the power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for an error vector magnitude.

9. (Currently Amended) A method as claimed in claim 1, ~~2 or 3~~, ~~characterized in that~~ wherein the limiting signal is determined by means of a threshold value set for the power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for a peak code domain error.

10. (Currently Amended) A method as claimed in claim 1, ~~2 or 3~~, ~~characterized in that~~ wherein the limiting signal is determined by means of a threshold value set for the power or amplitude values, the threshold value being set so as to obtain the desired Peak-to-Mean Ratio, Peak-to-Average Ratio, Crest factor of the power or amplitude.

11. (Currently Amended) A method as claimed in claim 2, ~~characterized in that~~ wherein a second clipping stage is added.

12. (Currently Amended) A method as claimed in claim 2, ~~characterized in that~~ wherein orthogonalization is carried out by minimizing the equation

$$\left| \begin{bmatrix} x_1 & x_2 & \dots & x_p \end{bmatrix} \begin{bmatrix} c_{1,1} & c_{2,1} & \dots & c_{n,1} \\ c_{1,2} & c_{2,2} & \ddots & c_{n,2} \\ \vdots & \vdots & \ddots & \vdots \\ c_{1,p} & c_{2,p} & \dots & c_{n,p} \end{bmatrix} - \begin{bmatrix} y_1 & y_2 & \dots & y_n \end{bmatrix} \right|$$

13. (Currently Amended) A method as claimed in claim 2, ~~characterized in that~~ wherein unused codes are utilized in orthogonalization.

14. (Currently Amended) A method as claimed in claim 2, ~~characterized in that~~ wherein codes used at a lower modulation level are utilized in orthogonalization.

15. (Currently Amended) A method as claimed in claim 2 or 3, ~~characterized in that~~ wherein the orthogonalization of the error signal is carried out according to carriers.

16. (Currently Amended) A method as claimed in claim 3, ~~characterized in that~~ wherein the error signal is divided equally between different carriers.

17. (Currently Amended) A method as claimed in claim 3, ~~characterized in that~~ wherein the error signal is divided between different carriers in relation to the power or amplitude values to be clipped.

18. (Currently Amended) A transmitter limiting a signal at chip level, ~~characterized in that~~ the transmitter comprising:

~~the transmitter comprises means (704) for determining a limiting signal from a transmissible signal filtered using a pulse shaping filter,~~

~~the transmitter comprises means (704, 710, 712) for determining an error signal using the transmissible signal and the limiting signal,~~

~~the transmitter comprises means (720) for generating a limited transmissible signal by reducing the error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal,~~

~~the transmitter comprises means (722, 724) for filtering the limited transmissible signal using the pulse shaping filter.~~

19. (Currently Amended) A transmitter limiting a signal at chip level, ~~characterized in that~~ the transmitter comprising:

~~the transmitter comprises means (804) for determining a first limiting signal from a transmissible signal filtered using a pulse shaping filter,~~

~~the transmitter comprises means (804, 806, 808) for determining a first error signal using the transmissible signal and the first limiting signal,~~

~~the transmitter comprises means (816) for orthogonalizing the first error signal filtered using the filter matched to a chip pulse waveform,~~

~~the transmitter comprises means (822) for generating a first limited transmissible signal by reducing the orthogonalized first error signal from the transmissible signal,~~

~~the transmitter comprises means (828) for determining a second limiting signal from the first limited transmissible signal filtered using the pulse shaping filter,~~

~~the transmitter comprises means (828, 832, 834) for determining a second error signal using the first limited transmissible signal and the second limiting signal,~~

~~the transmitter comprises means (842) for generating a second limited transmissible signal by reducing the second error signal filtered using the filter matched to a chip pulse waveform from the transmissible signal,~~

~~the transmitter comprises means (844, 846) for filtering the second limited transmissible signal using the pulse shaping filter.~~

20. (Currently Amended) A transmitter limiting a signal at chip level,
~~characterized in that~~ the transmitter comprising:

~~the transmitter comprises means (912) for combining at least two signals modulated on different carriers to a combination signal,~~

~~the transmitter comprises~~ means (914) for determining a limiting signal from the combination signal filtered using a pulse shaping filter,

~~the transmitter comprises~~ means (914, 918, 920) for determining an error signal using the combination signal and the limiting signal,

~~the transmitter comprises~~ means (922) for dividing the error signal onto different carriers in a predetermined manner,

~~the transmitter comprises~~ means (938, 948) for generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,

~~the transmitter comprises~~ means (940, 942, 950, 952) for filtering the limited transmissible signals using the pulse shaping filter,

~~the transmitter comprises~~ means (954) for generating a combined limited transmissible signal by combining the filtered limited transmissible signals.

21. (Currently Amended) A transmitter limiting a signal at chip level,
~~characterized~~ in that the transmitter comprising:

~~the transmitter comprises~~ means (902, 906) for filtering transmissible signals modulated on different carriers using pulse shaping filters,

~~the transmitter comprises~~ means (912) for combining at least two filtered signals to a combination signal.

~~the transmitter comprises~~ means (914) for determining a limiting signal from the combination signal,

~~the transmitter comprises means (914, 918, 920) for determining an error signal using the combination signal and the limiting signal,~~

~~the transmitter comprises means (922) for dividing the error signal onto different carriers in a predetermined manner,~~

~~the transmitter comprises means (938, 948) for generating limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,~~

~~the transmitter comprises means (940, 942, 950, 952) for filtering the limited transmissible signals using the pulse shaping filter,~~

~~the transmitter comprises means (954) for generating a combined limited transmissible signal by combining the filtered limited transmissible signals.~~

22. (Currently Amended) A transmitter as claimed in claim 18, ~~19 or 20,~~
~~characterized in that~~ wherein the transmissible signal is a baseband signal.

23. (Currently Amended) A transmitter as claimed in claim 18 ~~or 19,~~
~~characterized in that~~ wherein the limiting signal is a baseband signal.

24. (Currently Amended) A transmitter as claimed in claim 18 ~~or 19,~~
~~characterized in that~~ wherein the error signal is a baseband signal.

25. (Currently Amended) A transmitter as claimed in claim 18, ~~19 or 20,~~
~~characterized in that~~ the transmitter further comprising ~~comprises the means~~
(~~704, 804, 828, 914~~) for determining the limiting signal by means of a threshold value set for the power or amplitude values.

26. (Currently Amended) A transmitter as claimed in claim 18, ~~19 or 20~~, ~~characterized in that~~ the transmitter further comprising ~~comprises the means~~ (704, 804, 828, 914) for determining the limiting signal by means of a threshold value set for the power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for an error vector magnitude.

27. (Currently Amended) A transmitter as claimed in claim 18, ~~19 or 20~~, ~~characterized in that~~ the transmitter further comprising ~~comprises the means~~ (704, 804, 828, 914) for determining the limiting signal is determined by means of a threshold value set for the power or amplitude values, the threshold value being set bearing in mind the maximum value predetermined for a peak code domain error.

28. (Currently Amended) A transmitter as claimed in claim 18, ~~19 or 20~~, ~~characterized in that~~ the transmitter further comprising ~~comprises the means~~ (704, 804, 828, 914) for determining the limiting signal by means of a threshold value set for the power or amplitude values, the threshold value being set so as to obtain the desired Peak-to-Mean Ratio, Peak-to-Average Ratio, Crest factor of the power or amplitude.

29. (Currently Amended) A transmitter as claimed in claim 19 ~~or 20~~, ~~characterized in that~~ wherein the orthogonalization of the error signal is carried out according to carriers.

30. (Currently Amended) A transmitter as claimed in claim 20, ~~characterized in that~~ the transmitter further comprising ~~comprises the means~~ (922) for dividing the error signal equally between different carriers.

31. (Currently Amended) A transmitter as claimed in claim 20,
~~characterized in that~~ the transmitter further comprising ~~comprises the means~~
 (922) for dividing the error signal between different carriers in relation to the power or
 amplitude values to be clipped.

32. (Currently Amended) A transmitter as claimed in claim 19,
~~characterized in that~~ the transmitter further comprising ~~comprises the means~~
 (816) for carrying out orthogonalization by minimizing the equation

$$\left| \begin{bmatrix} x_1 & x_2 & \dots & x_p \end{bmatrix} \begin{bmatrix} c_{1,1} & c_{2,1} & \dots & c_{n,1} \\ c_{1,2} & c_{2,2} & \ddots & c_{n,2} \\ \vdots & \vdots & \ddots & \vdots \\ c_{1,p} & c_{2,p} & \dots & c_{n,p} \end{bmatrix} - \begin{bmatrix} y_1 & y_2 & \dots & y_n \end{bmatrix} \right|.$$

33. (Currently Amended) A transmitter as claimed in claim 19,
~~characterized in that~~ the transmitter further comprising ~~comprises the means~~
 (816) for carrying out orthogonalization utilizing unused codes.

34. (Currently Amended) A transmitter as claimed in claim 19,
~~characterized in that~~ the transmitter further comprising ~~comprises the means~~
 (816) for carrying out orthogonalization utilizing codes used at a lower modulation level.

Please add new claims 35-38 as follows:

35. (New) A transmitter limiting a signal at chip level, the transmitter being
 configured to:

determine a limiting signal from a transmissible signal filtered using a pulse
 shaping filter,

determine an error signal using the transmissible signal and the limiting signal,
generate a limited transmissible signal by reducing the error signal filtered using
the filter matched to a chip pulse waveform from the transmissible signal,
filter the limited transmissible signal using the pulse shaping filter.

36. (New) A transmitter limiting a signal at chip level, the transmitter being
configured to:

determine a first limiting signal from a transmissible signal filtered using a pulse
shaping filter,

determine a first error signal using the transmissible signal and the first limiting
signal,

orthogonalize the first error signal filtered using the filter matched to a chip pulse
waveform,

generate a first limited transmissible signal by reducing the orthogonalized first
error signal from the transmissible signal,

determine a second limiting signal from the first limited transmissible signal
filtered using the pulse shaping filter,

determine a second error signal using the first limited transmissible signal and the
second limiting signal,

generate a second limited transmissible signal by reducing the second error signal
filtered using the filter matched to a chip pulse waveform from the transmissible signal,

filter the second limited transmissible signal using the pulse shaping filter.

37. (New) A transmitter limiting a signal at chip level, the transmitter being configured to:

combine at least two signals modulated on different carriers to a combination signal,

determine a limiting signal from the combination signal filtered using a pulse shaping filter,

determine an error signal using the combination signal and the limiting signal,

divide the error signal onto different carriers in a predetermined manner,

generate limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,

filter the limited transmissible signals using the pulse shaping filter,

generate a combined limited transmissible signal by combining the filtered limited transmissible signals.

38. (New) A transmitter limiting a signal at chip level, the transmitter being configured to:

filter transmissible signals modulated on different carriers using pulse shaping filters,

combine at least two filtered signals to a combination signal.

determine a limiting signal from the combination signal,

determine an error signal using the combination signal and the limiting signal,

divide the error signal onto different carriers in a predetermined manner,

generate limited transmissible signals by reducing each error signal part filtered using the filter matched to a chip pulse waveform from a corresponding transmissible signal,

filter the limited transmissible signals using the pulse shaping filter,

generate a combined limited transmissible signal by combining the filtered limited transmissible signals.